

CUST. NAME:

PROJECT NO.:

P.O. NUMBER:

DESCRIPTION:

G3+B INVERTER STANDARD
932~1200kVA, SINEWAVE
1200kVA, NON-SINEWAVE
1400~1500kVA, SINEWAVE, 40°C
1400~1500kVA, NON-SINEWAVE, 40°C

NO	DRAWING NO	REV	DRAWING DESCRIPTION		
00	I808HR00	5	DRAWING LIST 1		
01	I808HR01	3	DRAWING LIST 2		
02	I808HR02	0	DRAWING LEGEND		
03	I808HR03	0	MODEL NUMBER CONFIGURATION		
04	----	--	-----		
05	I808HR05	3	EQUIPMENT RATINGS		
06	I808HR06	3	EQUIPMENT RATINGS		
07	----	--	-----		
08	I808HR08	1	THREE-LINE DIAGRAM		
09	I808HR09	0	MAIN CIRCUIT – AC IN/DC BUS		
10	I808HR10	0	MAIN CIRCUIT – DC BUS/AC OUT		
11	----	--	-----		
12	I808HR12	0	MAIN CIRCUIT DETAIL – INVERTER		
13	----	--	-----		
14	----	--	-----		
15	----	--	-----		

☒ FINAL

☐ PRELIMINARY

☐ FOR APPROVAL

Note: Final Engineering and Manufacturing will proceed upon receipt of final approval

☐ NOT APPROVED AS NOTED – RESUBMIT DRAWINGS FOR APPROVAL. DO NOT PROCEED WITH FINAL ENGINEERING OR MANUFACTURING.

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☐ APPROVED AS SUBMITTED – PROCEED WITH FINAL ENGINEERING AND MANUFACTURING.

APPROVAL BY:

Initial

Date

NO	DRAWING NO	REV	DRAWING DESCRIPTION		
16	----	--	-----		
17	----	--	-----		
18	I808HR18	0	LOGIC INTERFACE CIRCUIT		
19	----	--	-----		
20	I808HR20	0	CONTROL CIRCUIT		
21	I808HR21	1	CONTROL CIRCUIT – TEMPERATURE CONTROL		
22	----	--	-----		
23	----	--	-----		
24	----	--	-----		
25	----	--	-----		
26	----	--	-----		
27	----	--	-----		
28	----	--	-----		
29	I808HR29	0	PCB INTERCONNECTIONS		
30	----	--	-----		
31	----	--	-----		

5	11/21/08	REV SHTS 00, 01	JT			<div><div><div>TOSHIBA</div><div>TOSHIBA INTERNATIONAL CORPORATION</div><div>MADE IN HOUSTON, TEXAS U.S.A.</div></div><div>THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS UNLESS PRIOR WRITTEN AUTHORIZATION IS OBTAINED.</div></div>			
4	04/30/08	REV SHTS 00, 05, 06, 08	JT	JT	JBA				
3	12/06/07	REV SHTS 00, 05, 06, 21	JMP	JT	JBA				
2	11/02/07	ADD REVISION LEVELS	JT	JT	JBA				
1	10/08/07	DELETE REVISION LEVELS	JT	JT	JBA				
REV	DATE	DESCRIPTION	BY	CHK	APPR				

TITLE: DRAWING LIST 1			REVISION: 5		SCALE:	
3 POWER MODULES G3+B 480VAC						
CUSTOMER:			PROJECT NUMBER:		DRAWING NUMBER: I808HR00	

CUST. NAME:

PROJECT NO.:

P.O. NUMBER:

DESCRIPTION:

G3+B INVERTER STANDARD
932~1200kVA, SINEWAVE
1200kVA, NON-SINEWAVE
1400~1500kVA, SINEWAVE, 40°C
1400~1500kVA, NON-SINEWAVE, 40°C

NO	DRAWING NO	REV	DRAWING DESCRIPTION
32	I808HR32	1	ENCLOSURE OUTLINE – N1, SINEWAVE, 6 PULSE
33	I808HR33	1	ENCLOSURE OUTLINE – N1, SINEWAVE, 12 PULSE
34	I808HR34	1	ENCLOSURE OUTLINE – N1, NON-SINEWAVE, 6 PULSE
35	I808HR35	1	ENCLOSURE OUTLINE – N1, NON-SINEWAVE, 12 PULSE
36	I808HR36	1	ENCLOSURE OUTLINE – N3R, SINEWAVE, 6 PULSE
37	I808HR37	1	ENCLOSURE OUTLINE – N3R, SINEWAVE, 12 PULSE
38	I808HR38	1	ENCLOSURE OUTLINE – N3R, NON-SINEWAVE, 6 PULSE
39	I808HR39	1	ENCLOSURE OUTLINE – N3R, NON-SINEWAVE, 12 PULSE
40	----	--	-----
41	----	--	-----
42	----	--	-----
43	----	--	-----
44	----	--	-----
45	----	--	-----
46	----	--	-----
47	----	--	-----

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☐ PRELIMINARY

☐ FOR APPROVAL

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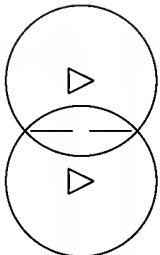
APPROVAL BY:

Initial

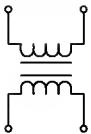
Date

NO	DRAWING NO	REV	DRAWING DESCRIPTION
48	----	--	-----
49	----	--	-----
50	----	--	-----
51	----	--	-----
52	----	--	-----
53	----	--	-----
54	----	--	-----
55	----	--	-----
56	----	--	-----
57	----	--	-----
58	----	--	-----
59	----	--	-----
60	----	--	-----
61	----	--	-----
62	----	--	-----
63	----	--	-----

4					<div><div>TOSHIBA</div><div>TOSHIBA INTERNATIONAL CORPORATION</div><div>MADE IN HOUSTON, TEXAS U.S.A.</div><div>THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS UNLESS PRIOR WRITTEN AUTHORIZATION IS OBTAINED.</div></div>				
3	11/21/08	REV SHTS 32~39	JT						
2	11/02/07	DEL MECH ASSEMBLIES; ADD REV LEVELS	JT	JT					JBA
1	10/08/07	ADD MECH ASSEMBLIES; DELETE REV LEVELS	JT	JT					JBA
0	10/17/05	FIRST ISSUE	HHP	JT					JBA
REV	DATE	DESCRIPTION	BY	CHK	APPR	TITLE: DRAWING LIST 2 3 POWER MODULES G3+B 480VAC CUSTOMER: PROJECT NUMBER: DRAWING NUMBER: 1808HR01			



POWER TRANSFORMER



CONTROL POWER OR
POTENTIAL TRANSFORMER



CURRENT TRANSFORMER



REACTOR



LIGHTNING ARRESTOR



CIRCUIT BREAKER



FUSED VACUUM
DRAWOUT CONTACTOR



AIR CONTACTOR



FUSE



CAPACITOR



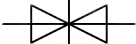
RESISTOR



DIODE



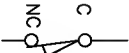
THYRISTOR



SURGE ABSORBER



INSULATED GATE
BIPOLAR TRANSISTOR (IGBT)



LIMIT SWITCH

DENOTES ACTUAL
CONTACT USED

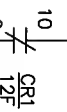
DEVICE NAME

N.O. CONTACT

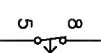
DENOTES RELAY CAN BE FOUND
ON PAGE 12, COLUMN F



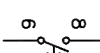
N.O. CONTACT



N.C. CONTACT



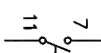
OFF-TIME DELAY CONTACT N.C.



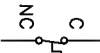
OFF-TIME DELAY CONTACT N.O.



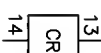
ON-TIME DELAY CONTACT N.C.



ON-TIME DELAY CONTACT N.O.



THERMAL SWITCH N.C.



RELAY COIL

NAME	
a	b 11B
a	b b
a	b b
a	---b---
MODEL #	

DENOTES b – CONTACT, USED ON
PAGE 11, COLUMN B

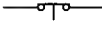
DENOTES CONTACTS UNAVAILABLE
a – DENOTES NORMALLY OPEN
b – DENOTES NORMALLY CLOSED



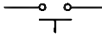
POTENTIOMETER



SELECTOR SWITCH



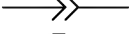
N.C. PUSH BUTTON



N.O. PUSH BUTTON



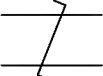
CONTROL TERMINAL BLOCK



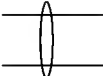
PLUG/CONNECTOR ASSEMBLY



GROUND



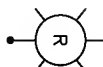
TWISTED WIRE



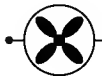
SHIELDED WIRE



METER



ILLUMINATED PUSH BUTTON
OR INDICATING LIGHT
(LETTER = COLOR)



COOLING FAN

LEGEND

- ACL AC LINE REACTOR
- A/C AIR CONDITIONER
- AM AMMETER
- AS AMMETER SWITCH
- CL CURRENT LIMITER
- CPT CONTROL POWER TRANSFORMER
- CT CURRENT TRANSFORMER
- DBR DYNAMIC BRAKING RESISTOR
- M AIR CONTACTOR
- MCCB MOLDED CASE CIRCUIT BREAKER
- MCP MOTOR CIRCUIT PROTECTOR
- MOT MOTOR
- OL THERMAL OVERLOAD
- RFF RADIO FREQUENCY FILTER
- VFD VARIABLE FREQUENCY DRIVE
- VM VOLTMETER
- VS VOLTMETER SWITCH
- XFMR TRANSFORMER
- ZCT GROUND FAULT CT

SYMBOL LEGEND

- ① JUMPER
- Ⓜ MECHANICAL INTERLOCK

4					
3					
2					
1					
0	10/17/05	FIRST ISSUE			
REV	DATE	DESCRIPTION	BY	CHK	APPR

TOSHIBA

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TITLE: DRAWING LEGEND	
CUSTOMER:	
PROJECT NUMBER:	

REVISION: 0	SCALE:
DRAWING NUMBER: 1808HR02	

G3+B DRIVE MODEL NUMBER DEVELOPMENT

G3+ SERIES DRIVE

REVISION B

RATED VOLTAGE
4 - 480VAC

G3+ B 4

CONFIGURATION

CC1 - NEMA 1, 12 PULSE

CC1S - NEMA 1, 12 PULSE, WITH SINEWAVE FILTER

CB1 - NEMA 1, 6 PULSE

CB1S - NEMA 1, 6 PULSE, WITH SINEWAVE FILTER

CC - NEMA 3R, 12 PULSE

CCS - NEMA 3R, 12 PULSE, WITH SINEWAVE FILTER

CB - NEMA 3R, 6 PULSE

CBS - NEMA 3R, 6 PULSE, WITH SINEWAVE FILTER

①	NEMA 1	②NEMA 3R	③6 PULSE	④12 PULSE	⑤SINEWAVE	⑥NON-SINEWAVE
X				X		X
X				X	X	
X			X			X
X			X		X	
	X			X		X
	X		X		X	
	X					X

AMBIENT TEMPERATURE

DRIVE RATINGS		WITH SINEWAVE FILTER			WITHOUT SINEWAVE FILTER		
		40C	50C	50C	40C	50C	50C
93K	- 932kVA		X				
10L	- 1000kVA		X				
12L	- 1200kVA				X		X
14L40	- 1400kVA				X		
15L40	- 1500kVA				X		

OPTIONS TABLE

①	NEMA 1	②NEMA 3R	③6 PULSE	④12 PULSE	⑤SINEWAVE	⑥NON-SINEWAVE
X				X		X
X				X	X	
X			X			X
X			X		X	
	X			X		X
	X			X		
	X		X		X	

4									
3									
2									
1									
0	10/17/05	FIRST ISSUE	HHP						
REV	DATE	DESCRIPTION	BY	CHK	APPR				

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TITLE:

MODEL NUMBER CONFIGURATION

3 POWER MODULES G3+B 480VAC

CUSTOMER:

PROJECT NUMBER:

REVISION:

0

SCALE:

DRAWING NUMBER:

1808HR03

PAGE No.	DEVICE	DESCRIPTION	TYPE FORM	RATING	PART NUMBER	TYPE FORM	RATING	PART NUMBER	TYPE FORM	RATING	PART NUMBER
8	③ MCCB1	CIRCUIT BREAKER	SOD PUL36000S12-RE10	600V, 1200A, 3P, 65KAIC@480V	PC11001P014	SOD PUL36000S12-RE10	600V, 1200A, 3P, 65KAIC@480V	PC11001P014	SMS RDSF220	600V, 1600A, 3P, 50KAIC@480V	PC11356P200
	④ MCCB1, 2	MOLDED CASE SWITCH	SOD PUL36000S61-RE10	600V, 600A, 3P, 65KAIC@480V	PC11001P011	SOD PUL36000S61-RE10	600V, 600A, 3P, 65KAIC@480V	PC11001P011	SOD PUL36000S61-RE10	600V, 800A, 3P, 65KAIC@480V	PC11001P012
	MCCB3	CPT1 PRIMARY CIRCUIT BRKR	SMS ED62B015	600V, 15A, 2P, 25KAIC@480V	PC11321P015	SMS ED62B015	600V, 15A, 2P, 25KAIC@480V	PC11321P015	SMS ED62B015	600V, 15A, 2P, 25KAIC@480V	PC11321P015
	BFU3	CPT1 SECONDARY FUSE	GLD TRM 23	20A, 250V, 1D, 10KAIC	PC26130P034	GLD TRM 23	20A, 250V, 1D, 10KAIC	PC26130P034	GLD TRM 23	20A, 250V, 1D, 10KAIC	PC26130P034
	③ FRA,B~FLA,B	SEMICONDUCTOR FUSE	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120
	④ FRA,B~FLA,B	SEMICONDUCTOR FUSE	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120	CRF A060URD32T111250	600V, 125A (X6)	PC15360P120
	BF1	BLOWN FUSE INDICATOR	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001
	CPT1	CNTL. PWR. TRANSFORMER	G11 GT-F852	380/400/415/460,230V, 3.3kVA	PC33130P331	G11 GT-F852	380/400/415/460,230V, 3.3kVA	PC33130P331	G11 GT-F852	380/400/415/460,230V, 3.3kVA	PC33130P331
9	⑥ ACL1~3	OUTPUT LINE REACTOR	TCI KTRSWA400XA	600V, 441A, 0.120mH, 2.2kHz	PC34092P502	TCI KTRSWA400XA	480V, 480A, 1.5%	PC34092P400	TCI KTRSWA400XA	600V, 588A, 0.077mH, 2.2kHz	PC34092P501
	⑤ ACL1~3	OUTPUT LINE REACTOR	SHZ M-N3015-A	200UF, 3PH, 460VAC, 50A	PC14150P021	SHZ M-N0044-D	250UF, 3PH, 460VAC, 75A	PC14150P020	SHZ M-N0044-D	250UF, 3PH, 460VAC, 75A	PC14150P020
	③ CAP1~6	FILTER CAPACITOR FUSE	CRF 6.9gGR SIB NH00	125A, 630VAC	PC15360P010	CRF 6.9gGR SIB NH00	125A, 630VAC	PC15360P010	CRF 6.9gGR SIB NH00	125A, 630VAC	PC15360P010
	⑤ BFU4~15	BLOWN FUSE INDICATOR	CRF F21015AC	250V, 10A	PC15360P011	CRF F21015AC	250V, 10A	PC15360P011	CRF F210156	250V, 10A	PC15360P011
	HCTB, HCTC	HALL CT	LEM HAX-1000-3/SP11	1125A 4V	PC30013P063	LEM HAX-1500-3/SP11	1450A 4V	PC30013P064	LEM HAX-1500-3/SP11	1450A 4V	PC30013P064
	MS1	SOFT START CONTACTOR	TMQ LC1F400-U7	400A, 60V, 4P	PC18701P026	TMQ LC1F500U7	500A, 60V, 3P	PC18701P025	TMQ LC1F500U7	500A, 60V, 3P	PC18701P025
	MS2	CAP DISCHARGE CONTACTOR	CLK 7001-5150-21	40A, 500VDC, 1P	PC18720P013	CLK 7001-5150-21	40A, 500VDC, 1P	PC18720P013	CLK 7001-5150-21	40A, 500VDC, 1P	PC18720P013
	OH1T~OH3T	T-STAT 75°C FIXED N.C.	TKN OH03-75B	75°C	45811	TKN OH03-75B	75°C	45811	TKN OH03-75B	75°C	45811
	OH1B~OH3B	T-STAT 90°C FIXED N.C.	TKN OH03-90B	90°C	37619	TKN OH03-90B	90°C	37619	TKN OH03-90B	90°C	37619
	THR1	HEATSINK THERMISTOR	FEN 590-32BP01-203	2KOHM @ 25 DEG C	41935	FEN 590-32BP01-203	2KOHM @ 25 DEG C	41935	FEN 590-32BP01-203	2KOHM @ 25 DEG C	41935
	R1	SOFT START RESISTOR	PWO WR33	0.67 OHM, 300W, 2S	PC41490P052	PWO WR33	0.67 OHM, 300W, 2S	PC41490P052	PWO WR33	0.67 OHM, 300W, 2S	PC41490P052
	R2	CAP DISCHARGE RESISTOR	PWO SXR2-500	500 OHM, 300W, 3S	PC41490P052	PWO SXR2-500	500 OHM, 300W, 3S	PC41490P052	PWO SXR2-500	500 OHM, 300W, 3S	PC41490P052
	REC1A, M, B~6	DIODE PA-K	EUP DD260N16K	1600V, 261A (X18)	PC40316P260	EUP DD260N16K	1600V, 261A (X18)	PC40316P260	EUP DD260N16K	1600V, 261A (X18)	PC40316P260
	③ SA1~SA3	SURGE SUPPRESSOR	SMS B40K50	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003
	④ SA4~SA6	SURGE SUPPRESSOR	SMS B40K50	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003
	IGBT7	DYNAMIC BRAKE IGBT	EUP FZ600R12KE3	1200V, 60A (X2)	PC40200P600	EUP FZ600R12KE3	1200V, 60A (X2)	PC40200P600	EUP FZ600R12KE3	1200V, 60A (X2)	PC40200P600
	D7A, B	DYNAMIC BRAKE DIODE	SMK SKN60F15	75A, 1.00V	PC40300P075	SMK SKN60F15	75A, 1.00V	PC40300P075	SMK SKN60F15	75A, 1.00V	PC40300P075
	C7	SNUBBER CAPACITOR	EG 5MP-130J6K	5.0UF, 1.00VDC	46326	EG 5MP-130J6K	5.0UF, 1.00VDC	46326	EG 5MP-130J6K	5.0UF, 1.00VDC	46326
	C7A, B	SNUBBER CAPACITOR	SGU 564R30G4D47	4700pF, 3000V	PC42200P003	SGU 564R30G4D47	4700pF, 3000V	PC42200P003	SGU 564R30G4D47	4700pF, 3000V	PC42200P003
	R7	SNUBBER RESISTOR	UPE RBN50/8-25R	25 OHM, 50W	PC41490P035	UPE RBN50/8-25R	25 OHM, 50W	PC41490P035	UPE RBN50/8-25R	25 OHM, 50W	PC41490P035
10, 12	PCB6	DYNAMIC BRAKE G-E PROT	44348A	---	44348A	44348A	---	44348A	44348A	---	44348A
	HCTA	HALL CT	NNE HEC-05A(AMO)	500A, 1V	PC30013P067	NNE HEC-07A(AMO)	677A, 1V	PC30013P066	NNE HEC-07A(AMO)	677A, 1V	PC30013P066
	CA	CAPACITOR	HIT HCGF5AS2G123YQ	12kUF, 400VDC (3P/2S)	37568	HIT HCGF5AS2G123YQ	12kUF, 400VDC (4P/2S)	37568	HIT HCGF5AS2G123YQ	12kUF, 400VDC (4P/2S)	37568
	FA	SEMICONDUCTOR FUSE	CRF 6.9URB0003588	690V, 25A (X3)	52751	CRF 6.9URB0003588	690V, 25A (X4)	52751	CRF 6.9URB0003588	690V, 25A (X4)	52751
	RA	CAP BALANCING RESISTOR	DLR RS-10	50 KOHM, 10W (X6)	PC41470P052	DLR RS-10	50 KOHM, 10W (X8)	PC41470P052	DLR RS-10	50 KOHM, 10W (X8)	PC41470P052
	FUP, FUN	SEMICONDUCTOR FUSE	CRF 6.9URD32T110800	690V, 80A (X6)	37578	CRF 6.9URD32T11000	690V, 100A (X6)	47244	CRF 6.9URD32T11000	690V, 100A (X6)	47244
	BF1	BLOWN FUSE INDICATOR	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001
	IGBT	IGBT	EUP FZ600R12KE3	1200V, 60A (X12)	PC40200P600	EUP FZ600R12KE3	1200V, 60A (X18)	PC40200P600	EUP FZ600R12KE3	1200V, 60A (X18)	PC40200P600
	PCB20~20B	SNUBBER CIRCUIT PCB	PC61910P17A	---	PC61910P117A	PC61910P17A	---	PC61910P117A	PC61910P17A	---	PC61910P117A
	RP, RN	RESISTOR	ITK IRR100H	25 OHM, 100W	PC41490P038	ITK IRR100H	25 OHM, 100W	PC41490P038	ITK IRR100H	25 OHM, 100W	PC41490P038
	RST1, 1A	RESISTOR	EBG HPP/4-10R	10 OHM, 60W	53706	EBG HPP/4-10R	10 OHM, 60W	53706	EBG HPP/4-10R	10 OHM, 60W	53706
18	G3 KPD	G3 OPERATOR KEYPAD	---	---	48723	---	---	48723	---	---	48723
	DS1	DOOR SWITCH	IDE TABD311N-R	10A, 60V	PC21230P162	IDE TABD311N-R	10A, 60V	PC21230P162	IDE TABD311N-R	10A, 60V	PC21230P162
	MST	TIMER, ON DELAY	IDE G15Y-25N11200	240VAC COIL, 0.1S-10M DELAY	PC20111P180	IDE G15Y-25N11200	240VAC COIL, 0.1S-10M DELAY	PC20111P180	IDE G15Y-25N11200	240VAC COIL, 0.1S-10M DELAY	PC20111P180
	MSX	CONTROL RELAY	IDE RR2P-U-AC240V	240VAC COIL, 7A	PC20229P326	IDE RR2P-U-AC240V	240VAC COIL, 7A	PC20229P326	IDE RR2P-U-AC240V	240VAC COIL, 7A	PC20229P326
	FAN1~3	HEAT SINK FAN	ZA RH31M-4/130823	230VAC, 1200CFM, 50/60HZ	PC50050P310	ZA RH31M-4/130823	230VAC, 1200CFM, 50/60HZ	PC50050P310	ZA RH31M-4/130823	230VAC, 1200CFM, 50/60HZ	PC50050P310
21	C1~3	FAN RUN CAPACITOR	CDE SFA3754K219B-F	370V, 4uF	PC42000P412	CDE SFA3754K219B-F	370V, 4uF	PC42000P412	CDE SFA3754K219B-F	370V, 4uF	PC42000P412
	FAN11~13 (⑦FAN7)	INTERNAL FAN	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226
	NK1~3 (⑦NK7)	SURGE SUPPRESSOR	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427
	① FAN21~26	ENCLOSURE FAN	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226
	① NK4, 5	SURGE SUPPRESSOR	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M24KD	250VAC, 0.22uF, 220 OHM	00427
②	HEX1, 2	HEAT EXCHANGER	DAN PS060100H-P2	230VAC, 1.0A, 100W/F	PC67808P153	DAN PS060100H-P2	230VAC, 1.0A, 100W/F	PC67808P153	DAN PS060100H-P2	230VAC, 1.0A, 100W/F	PC67808P153
29	TCC	CONTACTOR	TMQ LC1D09U7	240V COIL, 9A, 600V	PC18701P060	TMQ LC1D09U7	240V COIL, 9A, 600V	PC18701P060	TMQ LC1D09U7	240V COIL, 9A, 600V	PC18701P060
	PCB1	CONTROL BOARD	VF5C-1271D	---	03828	VF5C-1271J	---	03828	VF5C-1271D	---	03828
	PCB2~2B	GATE DRIVE BOARD	42755P4E	---	42755P4E	42755P4F	---	42755P4F	42755P4F	---	42755P4F
	PCB3	INTERFACE BOARD	PC61910P10JA	---	PC61910P109A	PC61910P10JA	---	PC61910P109A	PC61910P10JA	---	PC61910P109A
	PCB4~4E	G-E PROTECT CIRCUIT BOARD	38383C	---	38383C	38383C	---	38383C	38383C	---	38383C
PCB5	PCB5	TERMINAL BOARD	41578A	---	41578A	41578A	---	41578A	41578A	---	41578A
	PCB7	OPTION ROM	58270	VER 7J08	58270	58270	VER 7J08	58270	58270	VER 7J08	58270

4

04/30/08

ECO 75305-CPT1 WAS SOD

JT

3

12/06/07

REMOVED "NEMA 1 ONLY" FROM NOTE 7.

JMP

JT

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10/08/07

ECO 74352

JT

JBA

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05/03/06

FIRST ISSUE

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DATE

DESCRIPTION

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TITLE:

EQUIPMENT RATINGS

3 POWER MODULES G3+B 480VAC

CUSTOMER:

PROJECT NUMBER:

DRAWING NUMBER:

REVISION:

3

SCALE:

1808HR05

PAGE No.		DEVICE	DESCRIPTION	1400kVA, 480V, 1684A				1500kVA, 480V, 1804A			
				TYPE FORM	RATING	PART NUMBER	TYPE FORM	RATING	PART NUMBER		
8	③	MCCB1	CIRCUIT BREAKER	SMS RD63F2J0	600V, 1800A, 3P, 50KAIC@480V	PC11356P200	SMS RD63F2J0	600V, 1800A, 3P, 50KAIC@480V	PC11356P200		
	④	MCCB1, 2	MOLDED CASE SWITCH	SQD PJL36000S1J-RE10	600V, 1000A, 3P, 65KAIC@480V	PC11001P013	SQD PJL36000S1J-RE10	600V, 1000A, 3P, 65KAIC@480V	PC11001P013		
		MCCB3	CPT1 PRIMARY CIRCUIT BRKR	SMS ED62B015	600V, 15A, 2P, 25KAIC@480V	PC11321P015	SMS ED62B015	600V, 15A, 2P, 25KAIC@480V	PC11321P015		
		8FU3	CPT1 SECONDARY FUSE	GLD TRM 2J	20A, 250V, 1D, 10KAIC	PC26130P034	GLD TRM 2J	20A, 250V, 1D, 10KAIC	PC26130P034		
	③	FRA,B~FTA,B	SEMICONDUCTOR FUSE	CRF A060URD32T11250	600V, 125JA (X6)	PC15360P120	CRF A060URD32T11250	600V, 125JA (X6)	PC15360P120		
	④	FRA,B~FTA,B	SEMICONDUCTOR FUSE	CRF A060URD32T11250	600V, 125JA (X6)	PC15360P120	CRF A060URD32T11250	600V, 125JA (X6)	PC15360P120		
		BF1	BLOWN FUSE INDICATOR	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001		
		CPT1	CNTL. PWR. TRANSFORMER	GTI GT-F852	380/400/415/460:230V, 3.3kVA	PC33130P331	GTI GT-F852	380/400/415/460:230V, 3.3kVA	PC33130P331		
	⑥	ACL1~3	OUTPUT LINE REACTOR	KLRE600BCB	480V, 600A, 1.5%	PC34092P600	TCI KLRE600B-B	480V, 600A, 1.5%	PC34092P600		
	③	ACL1~3	OUTPUT LINE REACTOR	TCI K1RSMW50JXA	600V, 588A, 0.077mH, 2.2kHz	PC34097P501	TCI K1RSMW50JXA	600V, 588A, 0.077mH, 2.2kHz	PC34097P501		
	⑤	CAP1~6	FILTER CAPACITOR	SHZ M-N0044-D	250UF, 3PH, 460VAC, 75A	PC14150P020	SHZ M-N0044-D	250UF, 3PH, 460VAC, 75A	PC14150P020		
	③	8FU4~15	FILTER CAPACITOR FUSE	CRF 6.9qGR SIB NH00	125A, 640VAC	PC15360P010	CRF 6.9qGR SIB NH00	125A, 640VAC	PC15360P010		
	⑤	BF1	BLOWN FUSE INDICATOR	CRF F21015-C	250V, 10A	PC15360P011	CRF F21015-C	250V, 10A	PC15360P011		
		HCTB, HCTC	HALL CT	LEM HAX-1600-3/SP11	1800A, 4V	PC30013P059	LEM HAX-1800-3/SP11	1800A, 4V	PC30013P060		
		MS1	SOFT START CONTACTOR	TMQ LC1F500U7	500A, 60JV, 3P	PC18701P025	TMQ LC1F500U7	500A, 60JV, 3P	PC18701P025		
		MS2	CAP DISCHARGE CONTACTOR	CLK 7001-515J-21	40A, 500VDC, 1P	PC18720P013	CLK 7001-515J-21	40A, 500VDC, 1P	PC18720P013		
		OH1T~OH3T	T-STAT 75C FIXED N.C.	TKN OH03-7JB	75°C	45811	TKN OH03-7JB	75°C	45811		
		OH1B~OH3B	T-STAT 90C FIXED N.C.	TKN OH03-90B	90°C	41935	FEN 590-32BP01-203	2KOHM @ 25 DEG C	PC41490P052		
		THR1	HEATSINK THERMISTOR	FEN 590-32BP01-203	2KOHM @ 25 DEG C	PC41490P052	PWO WR33	0.67 OHM, 100W, 2S	PC41490P052		
		R1	SOFT START RESISTOR	PWO WR33	500 OHM, 100W, 3S	PC41490P052	PWO WR33	500 OHM, 100W, 3S	PC41490P052		
		R2	CAP DISCHARGE RESISTOR	PWO SXR2-5D0	1600V, 26JA (X18)	PC40316P260	EUP DD260N16K	1600V, 26JA (X18)	PC40316P260		
		REC1A, M, B~6	DIODE PACK	EUP DD260N16K	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003		
		③	SA1~SA3	SURGE SUPPRESSOR	SMS B40K50	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003		
	④	S4A~S46	SURGE SUPPRESSOR	SMS B40K50	500V, 3000J	PC47000P003	SMS B40K50	500V, 3000J	PC47000P003		
		IGBT7	DYNAMIC BRAKE IGBT	EUP FZ600R12KE3	1200V, 60JA (X2)	PC40200P600	EUP FZ600R12KE3	1200V, 60JA (X2)	PC40200P600		
		D7A, B	DYNAMIC BRAKE DIODE	SMK SKN60F15	75A, 1500V	PC40300P075	SMK SKN60F15	75A, 1500V	PC40300P075		
		C7	SNUBBER CAPACITOR	EC 5MP-130-6K	5.0UF, 1000VDC	46326	EC 5MP-130-6K	5.0UF, 1000VDC	46326		
		C7A, B	SNUBBER CAPACITOR	SGU 564R30C4D47	4700pF, 3000V	PC42200P003	SGU 564R30C4D47	4700pF, 3000V	PC42200P003		
		R7	SNUBBER RESISTOR	UPE RBN50/8-25R	25 OHM, 50W	PC41490P035	UPE RBN50/8-25R	25 OHM, 50W	PC41490P035		
		PCB6	SNUBBER BRAKE G-E PROT	44348A	---	44348A	44348A	---	44348A		
	10, 12	HCTA	HALL CT	NNE HEC-07A(AM0)	677A, 4V	PC30013P066	NNE HEC-07A(AM0)	677A, 4V	PC30013P066		
		CA	CAPACITOR	HIT HCGF5AS2G123YQ	12kUF, 400VDC (4P/2S)	37568	HIT HCGF5AS2G123YQ	12kUF, 400VDC (4P/2S)	37568		
		FA	SEMICONDUCTOR FUSE	CRF 6.9URB0003S88	690V, 25JA (X4)	52751	CRF 6.9URB0003S88	690V, 25JA (X4)	52751		
		RA	CAP BALANCING RESISTOR	DLR RS-110	50 KOHM, 10W (X8)	PC41470P052	DLR RS-110	50 KOHM, 10W (X8)	PC41470P052		
		FUP, FUN	SEMICONDUCTOR FUSE	CRF 6.9URD32TT11000	690V, 100JA (X6)	47244	CRF 6.9URD32TT11000	690V, 100JA (X6)	47244		
		BF1	BLOWN FUSE INDICATOR	CRF MS3V1-5BS	250V, 3A	PC15360P001	CRF MS3V1-5BS	250V, 3A	PC15360P001		
		IGBT	IGBT	EUP FZ600R12KE3	1200V, 60JA (X18)	PC40200P600	EUP FZ600R12KE3	1200V, 60JA (X18)	PC40200P600		
		PCB20~20B	SNUBBER CIRCUIT PCB	PC61910P17A	25 OHM, 100W	PC61910P17A	PC61910P17A	25 OHM, 100W	PC61910P17A		
		RP, RN	RESISTOR	ITK IRH10JN	10 OHM, 60W	PC41490P038	ITK IRH10JN	10 OHM, 60W	PC41490P038		
		RS1, 1A	RESISTOR	EBG HPP/4-10R	53706	53706	EBG HPP/4-10R	53706	53706		
18	G3 KPD	G3 OPERATOR KEYPAD		---	---	48723	---	---	---	48723	
20	DS1	DOOR SWITCH	IDE TABD311N-R	10A, 600V	PC21230P162	IDE TABD311N-R	10A, 600V	PC21230P162	IDE TABD311N-R		
	MST	TIMER, ON DELAY	IDE G15Y-2SN11200	240VAC COIL, 0.1S-10M DELAY	PC20111P180	IDE G15Y-2SN11200	240VAC COIL, 0.1S-10M DELAY	PC20111P180	IDE G15Y-2SN11200		
	MSX	CONTROL RELAY	IDE RR2P-U-AC240V	240VAC COIL, 7A	PC20229P326	IDE RR2P-U-AC240V	240VAC COIL, 7A	PC20229P326	IDE RR2P-U-AC240V		
	FAN1~3	HEAT SINK FAN	ZA RH31M-4/110823	230VAC, 1200CFM, 50/60HZ	PC50050P310	ZA RH31M-4/110823	230VAC, 1200CFM, 50/60HZ	PC50050P310	ZA RH31M-4/110823		
	C1~3	FAN RUN CAPACITOR	CDE SFA37S4K219B-F	370V, 4UF	PC42000P412	CDE SFA37S4K219B-F	370V, 4UF	PC42000P412	CDE SFA37S4K219B-F		
②	FAN1~13 (⑦FAN7)	INTERNAL FAN	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030		
	NK1~3 (⑦NK7)	SURGE SUPPRESSOR	MCN RFM25M2.4KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M2.4KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M2.4KD		
	①	FAN2~26	ENCLOSURE FAN	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226	ETR 148VK0281030	240VAC, 33W, 50/60HZ, 255CFM	00226		
	①	NK4, 5	SURGE SUPPRESSOR	MCN RFM25M2.4KD	250VAC, 0.22uF, 220 OHM	00427	MCN RFM25M2.4KD	250VAC, 0.22uF, 220 OHM	00427		
	②	HEX1, 2	HEAT EXCHANGER	DAN PS060100B-P2	230VAC, 1.0A, 100W/F	PC67808P153	DAN PS060100B-P2	230VAC, 1.0A, 100W/F	PC67808P153		
④	12 PULSE OPTION										
	⑤	SINEWAVE FILTER OPTION									
	⑥	NON-SINEWAVE FILTER									
	29	TCC	CONTACTOR	TMQ LC1D09J7	240V COIL, 9A, 600V	PC18701P060	TMQ LC1D09J7	240V COIL, 9A, 600V	PC18701P060		
		PCB1	CONTROL BOARD	VF5C-1271D	---	03828	VF5C-1271D	---	03828		
⑦		PCB2~2B	GATE DRIVE BOARD	42755P4F	---	42755P4F	42755P4F	---	42755P4F		
		PCB3	INTERFACE BOARD	PC61910P109A	---	PC61910P109A	PC61910P109A	---	PC61910P109A		
		PCB4~4E	G-E PROTECT CIR. UIT BOARD	38383C	---	38383C	38383C	---	38383C		
		PCB5	TERMINAL BOARD	41578A	---	41578A	41578A	---	41578A		
		PCB7	OPTION R/M	58270	VER 7J08	58270	58270	VER 7J08	58270		

NOTES:

① NEMA 1 OPTION

② NEMA 3R OPTION

③ 6 PULSE OPTION

④ 12 PULSE OPTION

⑤ SINEWAVE FILTER OPTION

⑥ NON-SINEWAVE FILTER

⑦ IGBT7 OPTION

ECO 75305-CPT1 WAS SOD

REMOVED "NEMA 1 ONLY" FROM NOTE 7.

ECO 74352

FIRST ISSUE

DESCRIPTION

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TITLE:

EQUIPMENT RATINGS

3 POWER MODULES G3+B 480VAC

CUSTOMER:

PROJECT NUMBER:

DRAWING NUMBER:

REVISION:

3

SCALE:

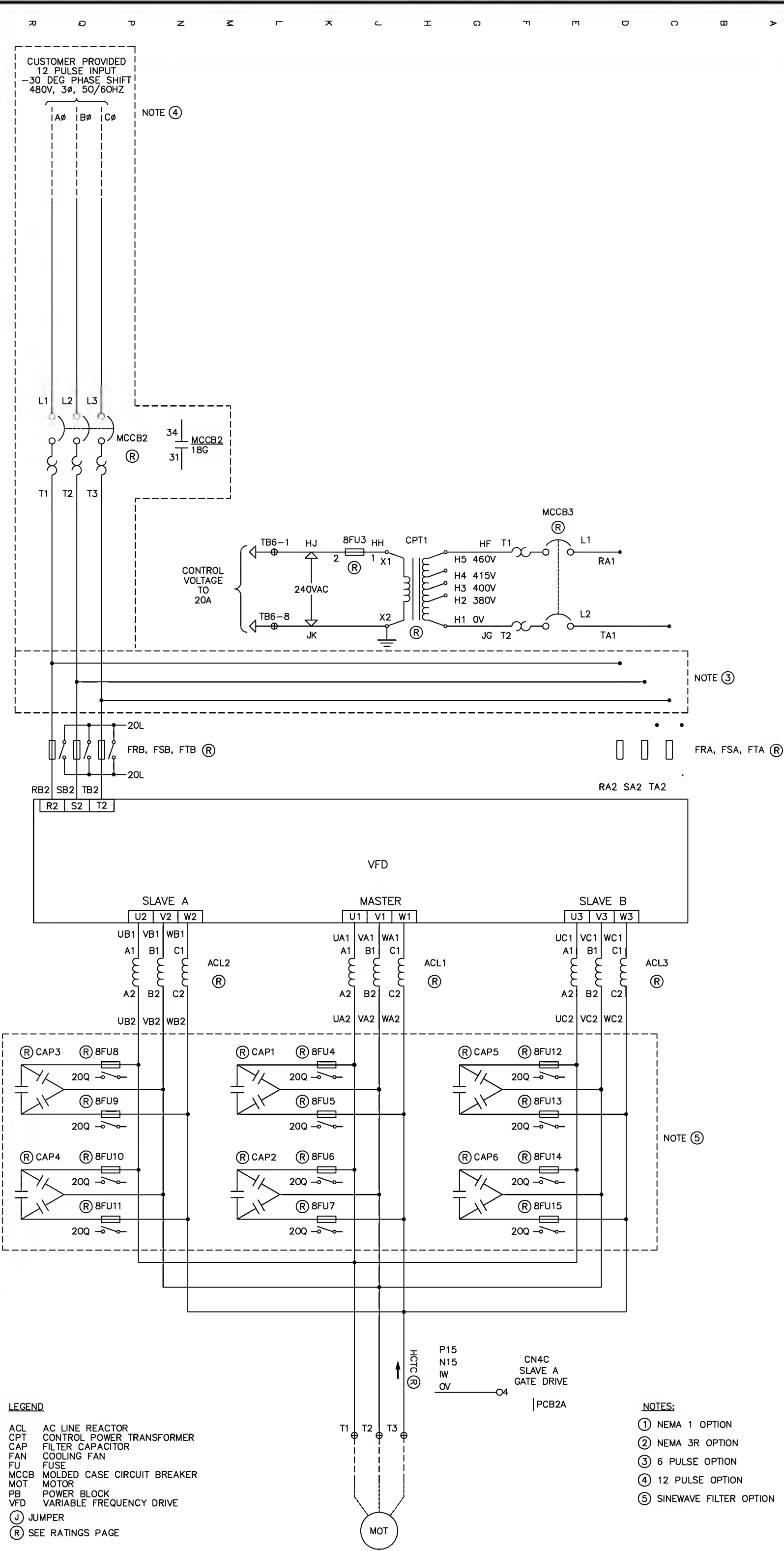
1808HR06

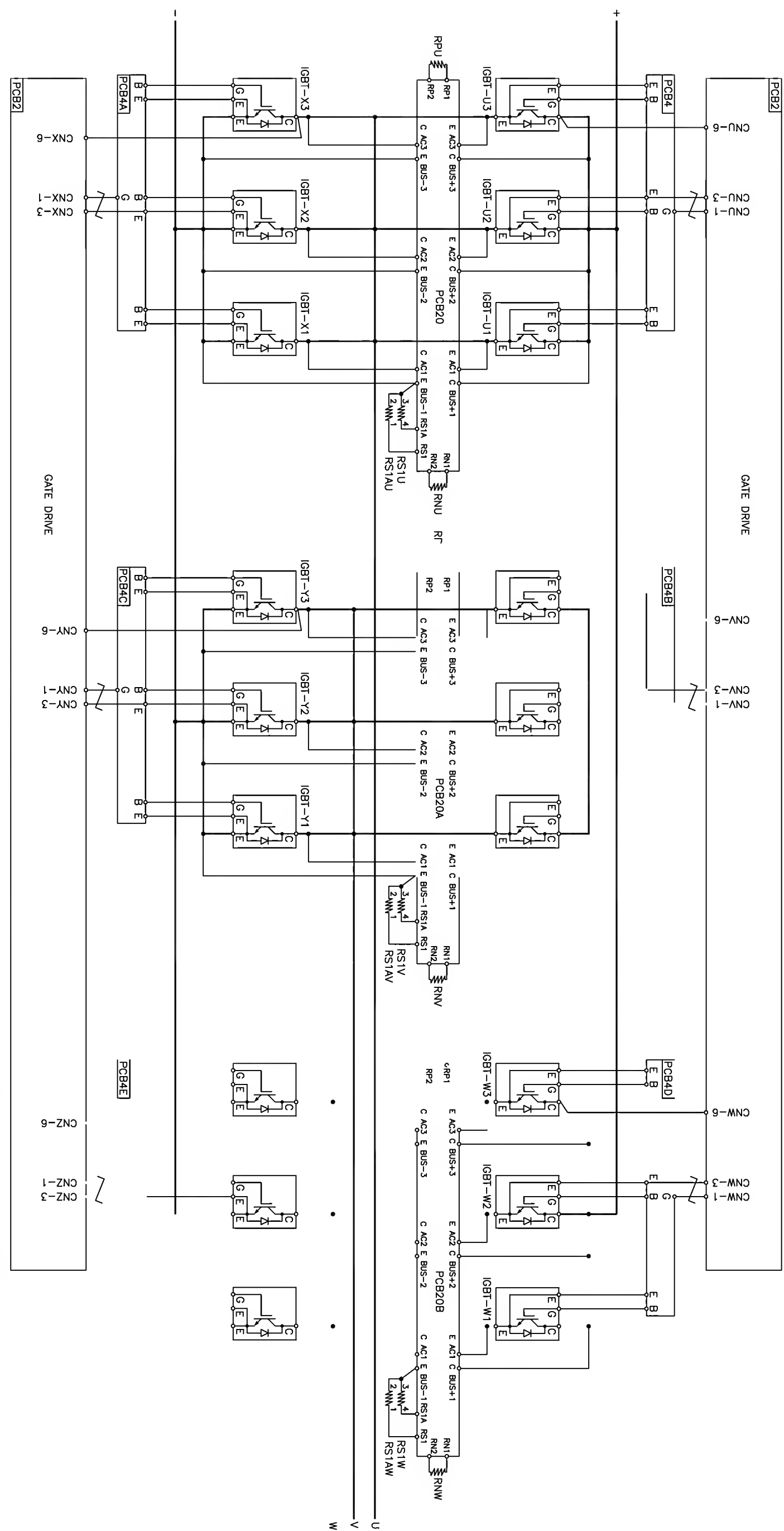
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3					
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1	04/30/08	ECO 75305-CPT1 WAS SQD	JT		
0	12/06/06	FIRST ISSUE	HHP	JT	JBA
REV	DATE	DESCRIPTION	BY	CHK	APPR

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TITLE:
LES G3+B 480VAC

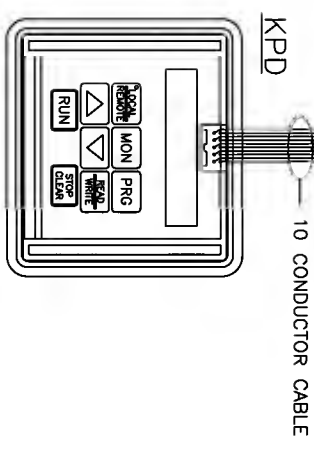
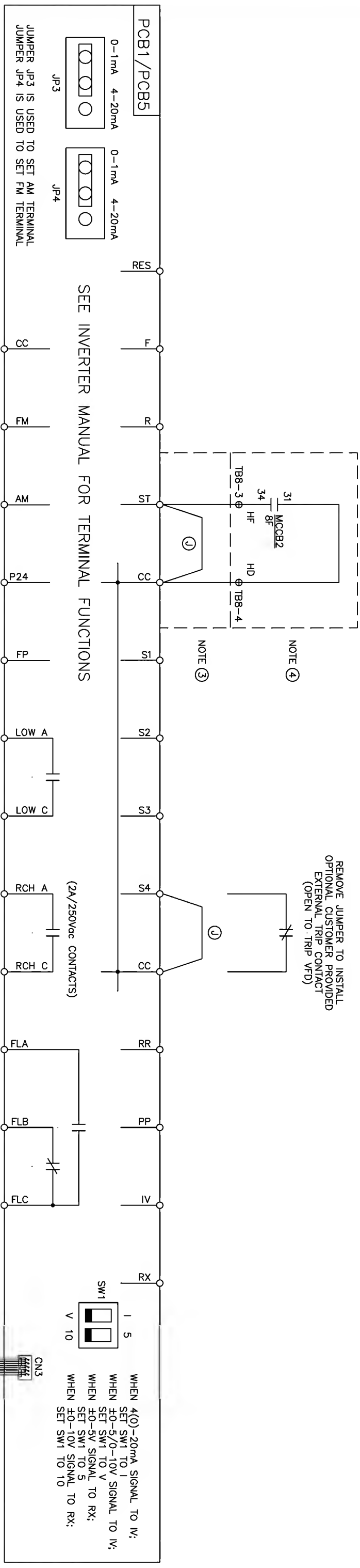
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CUSTOMER:
PROJECT NUMBER:
DRAWING NUMBER:





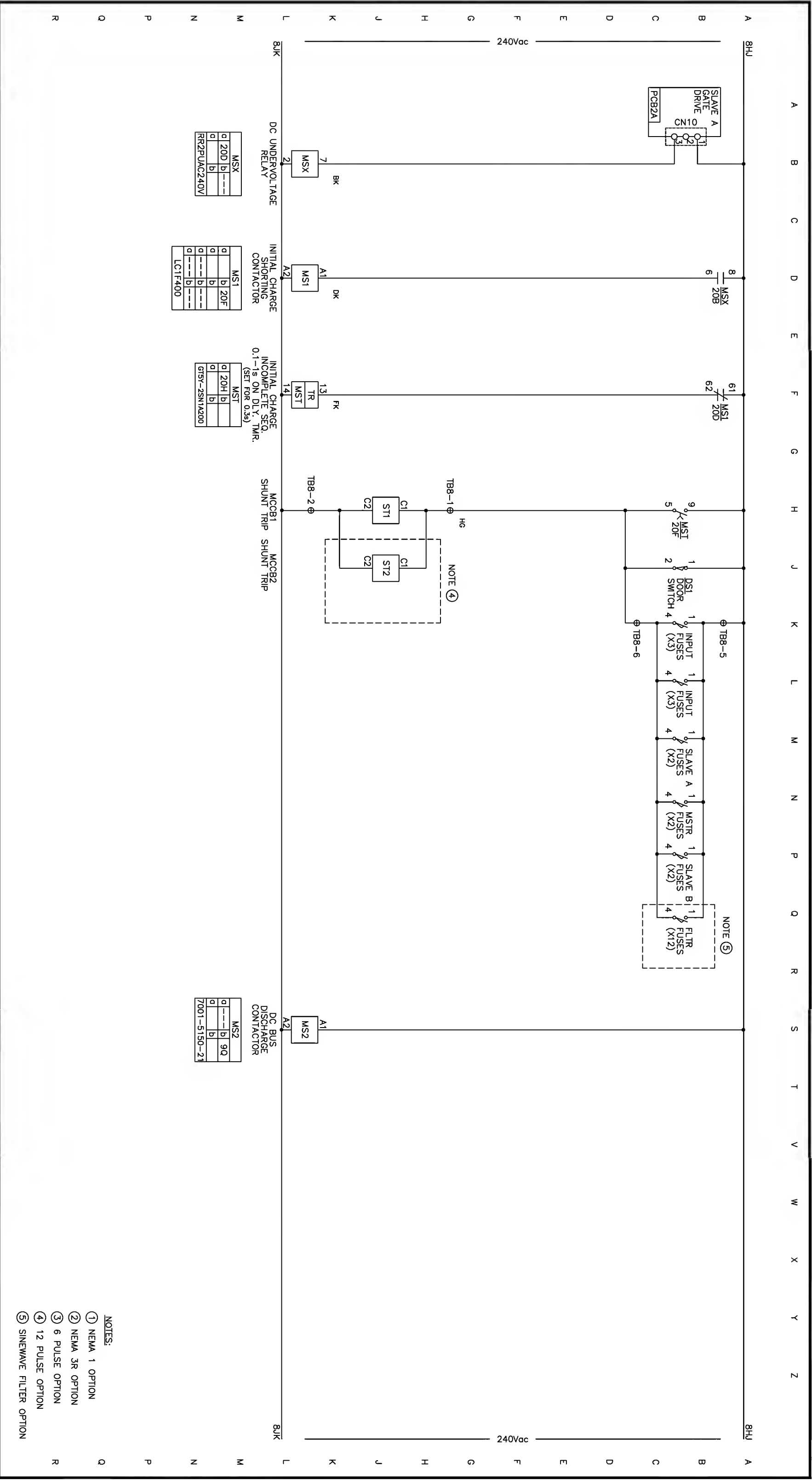
SEE RATINGS SHEET FOR IGBT QUANTITY

4										TOSHIBA TOSHIBA INTERNATIONAL CORPORATION MADE IN HOUSTON, TEXAS U.S.A. THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS UNLESS PRIOR WRITTEN AUTHORIZATION IS OBTAINED.	TITLE: MAIN CIRCUIT DETAIL - INVERTER 3 POWER MODULES G3+B 480VAC	REVISION: 0	SCALE:
3													
2													
1													
0	10/17/05	FIRST ISSUE		HHP									
REV	DATE	DESCRIPTION		BY	CHK	APPR					CUSTOMER:	PROJECT NUMBER:	DRAWING NUMBER: 1808HR12

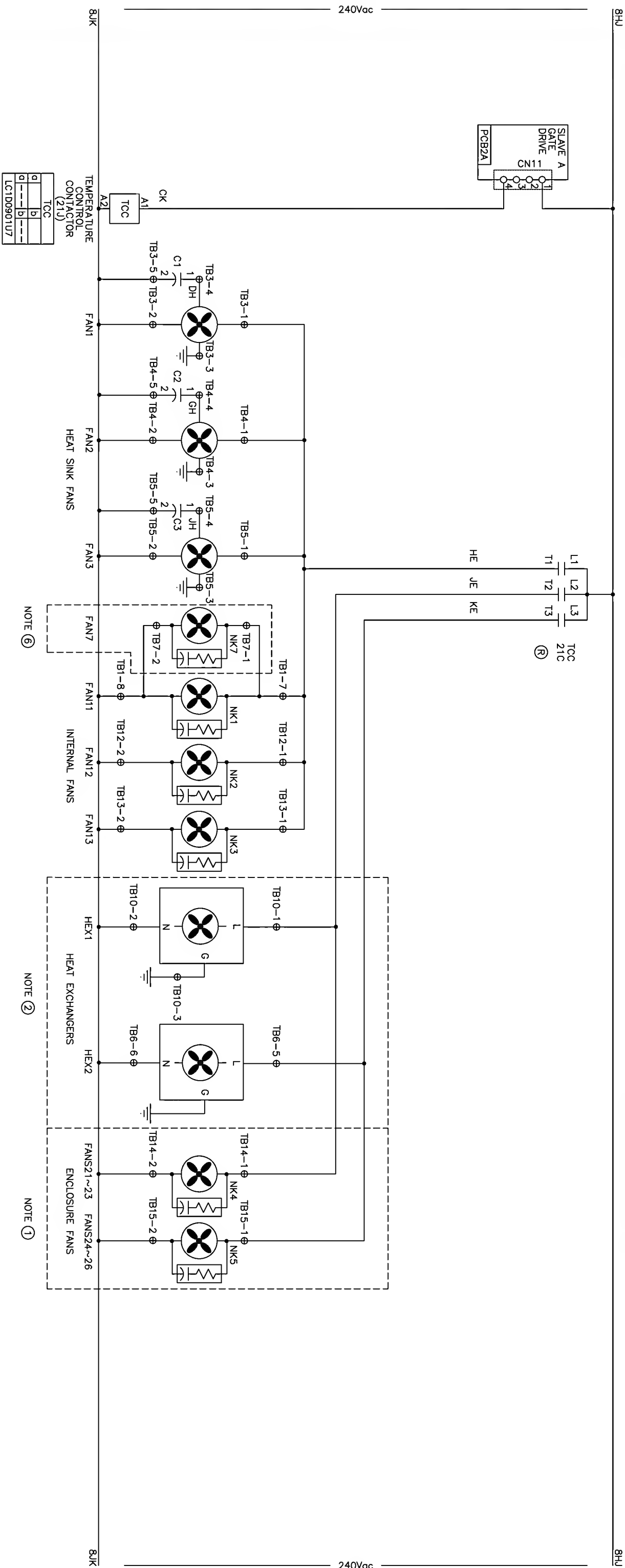


- NOTES:
- ① NEMA 1 OPTION
 - ② NEMA 3R OPTION
 - ③ 6 PULSE OPTION
 - ④ 12 PULSE OPTION
 - ⑤ SINEWAVE FILTER OPTION

[illegible]



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3								DRAWING NUMBER:	1808HR20	
2										
1										
0	10/17/05	FIRST ISSUE		HHP						
REV	DATE	DESCRIPTION		BY	CHK	APPR				



- NOTES:
- ① NEMA 1 OPTION
 - ② NEMA 3R OPTION
 - ③ 6 PULSE OPTION
 - ④ 12 PULSE OPTION
 - ⑤ SINEWAVE FILTER OPTION
 - ⑥ IGBT7 OPTION

4						TOSHIBA TOSHIBA INTERNATIONAL CORPORATION MADE IN HOUSTON, TEXAS U.S.A. THIS MATERIAL IS THE EXCLUSIVE PROPERTY OF TOSHIBA INTERNATIONAL CORPORATION AND SHALL NOT BE REPRODUCED, USED, OR DISCLOSED TO OTHERS UNLESS PRIOR WRITTEN AUTHORIZATION IS OBTAINED.	TITLE: CONTROL CIRCUIT-TEMPERATURE CONTROL 3 POWER MODULES G3+B 480VAC	REVISION: 1	SCALE:
3									
2									
1	12/06/07	REMOVED "NEMA 1 ONLY" FROM NOTE 6.	JMP						
0	10/17/05	FIRST ISSUE	HHP	JT	JBA				
REV	DATE	DESCRIPTION	BY	CHK	APPR		CUSTOMER:	PROJECT NUMBER:	DRAWING NUMBER: 1808HR21

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10/17/05

FIRST ISSUE

REV

DATE

DESCRIPTION

BY

CHK

APPR

TOSHIBA

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TITLE:

PCB INTERCONNECTION

CUSTOMER:

3 POWER MODULES G3+B 480VAC

PROJECT NUMBER:

1808HR29

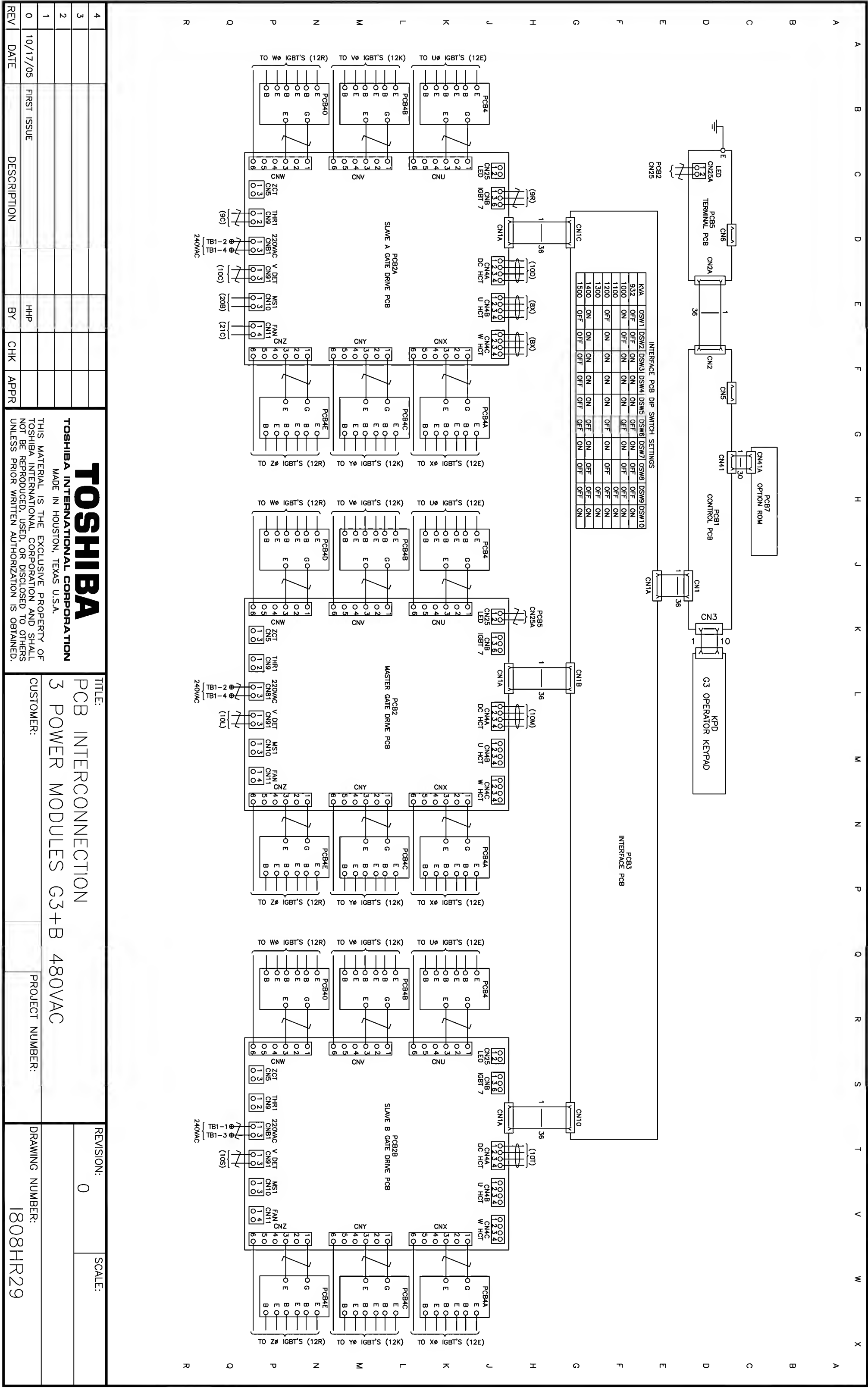
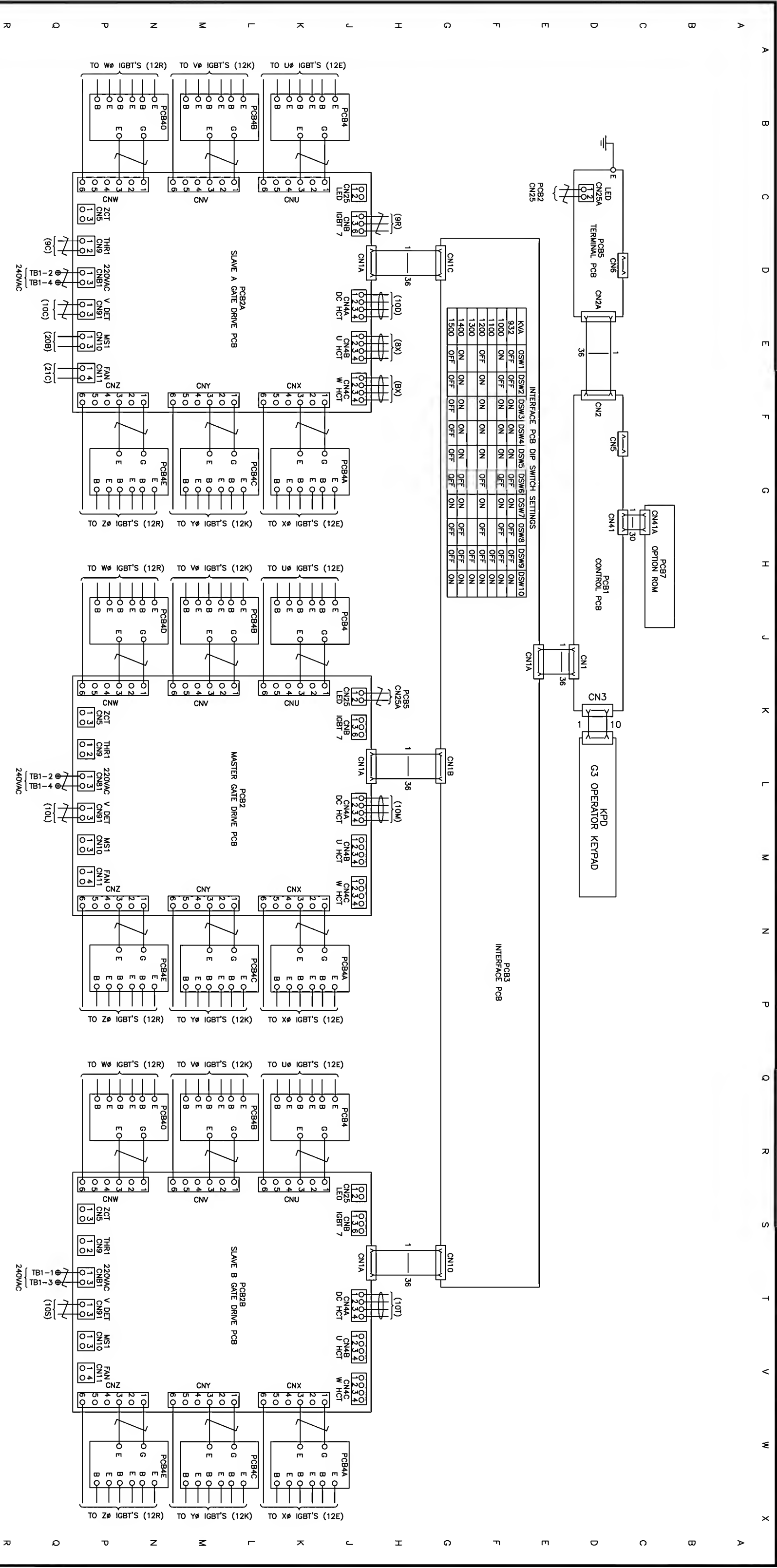
REVISION:

0

SCALE:

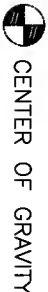
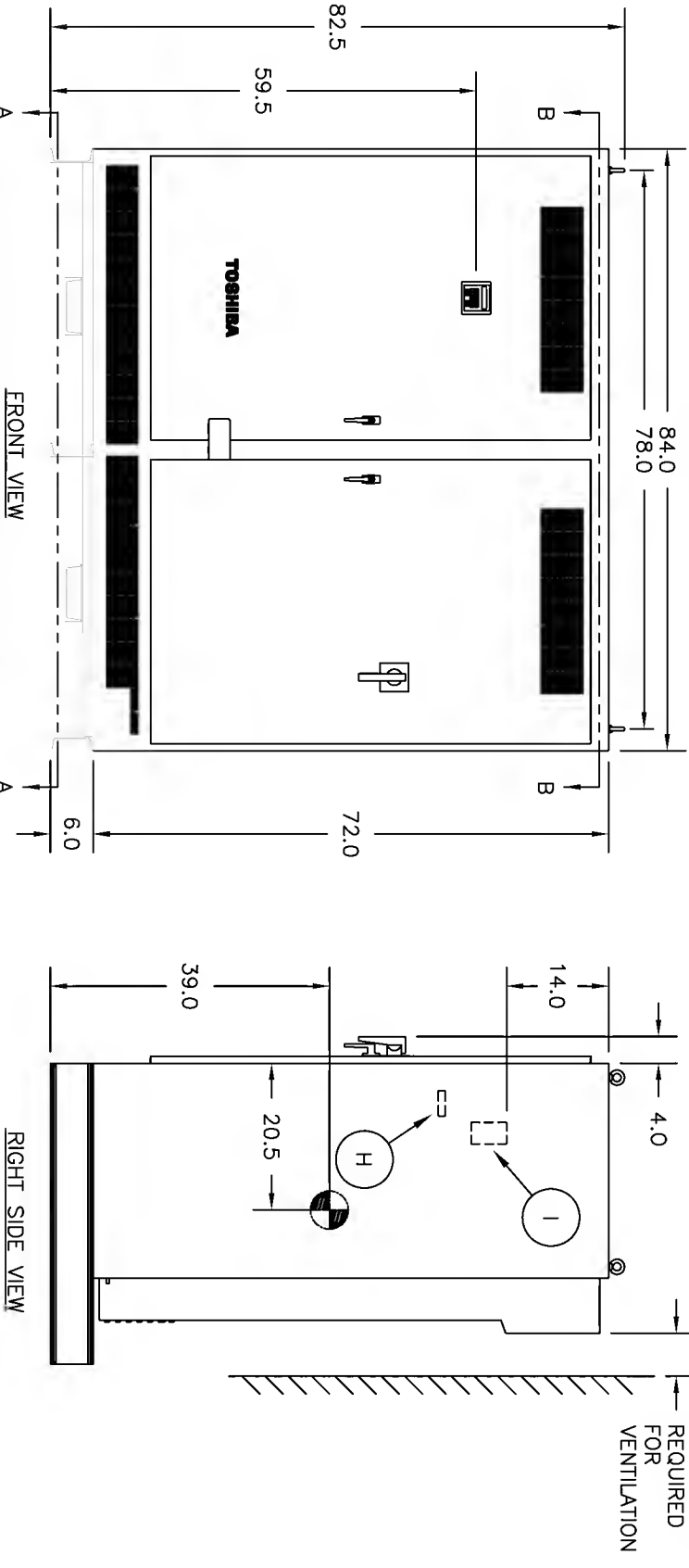
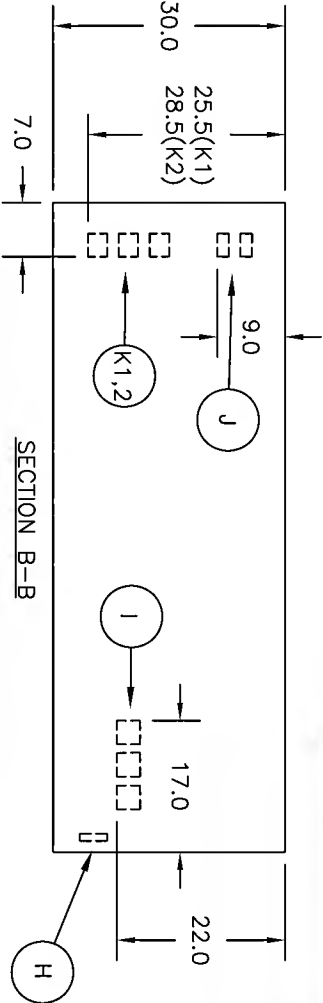
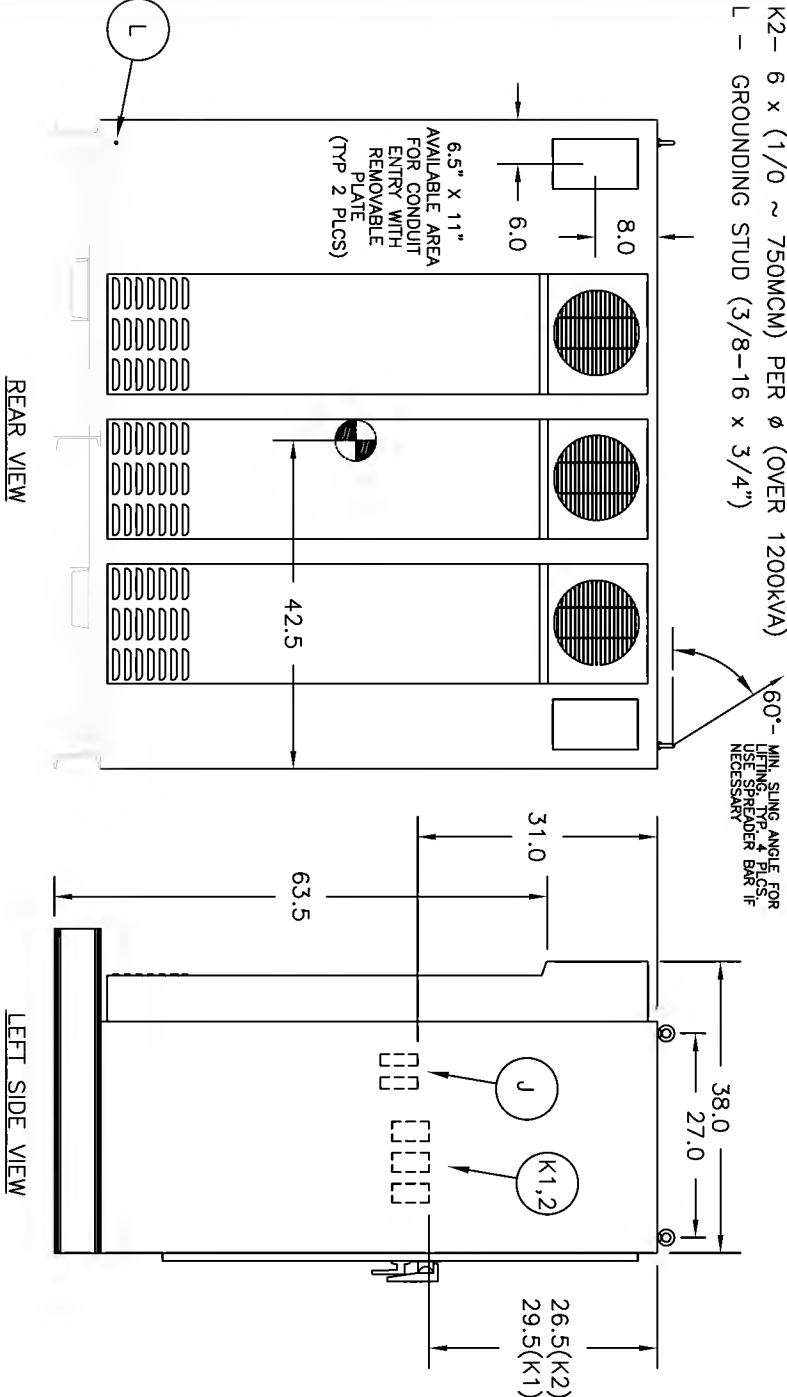
DRAWING NUMBER:

1808HR29



LEGEND

- H – GROUND LUG (1/0~350MCM)
- I – INPUT TERMINATIONS (REAR ENTRY)
- 4 x (1/0 ~ 750MCM) PER Ø (UP TO 1200kVA)
- 6 x (1/0 ~ 750MCM) PER Ø (OVER 1200kVA)
- J – DB RESISTOR CONNECTIONS (WHEN INSTALLED)
- 2 x (4 AWG ~ 350MCM) PER TERMINAL
- OUTPUT TERMINATIONS (REAR ENTRY)
- K1– 4 x (1/0 ~ 750MCM) PER Ø (UP TO 1200kVA)
- K2– 6 x (1/0 ~ 750MCM) PER Ø (OVER 1200kVA)
- L – GROUNDING STUD (3/8–16 x 3/4")



CENTER OF GRAVITY

NOTES

- DIMENSIONS ARE IN INCHES.
- DIMENSIONS FOR REFERENCE ONLY.
- WEIGHT: APPROX. 3500lbs (1600kg)
- COLOR: GRAY
- INPUT/OUTPUT TERMINATION BENDING
- SPACE IN ACCORDANCE WITH NEC TABLE 312–6(b)

4					
3					
2					
1	11/21/08	KPD WAS 57.5; ADD GRD STUD; REV BASE	JT		
0	10/17/05	FIRST ISSUE	HHP	JT	JBA
REV	DATE	DESCRIPTION	BY	CHK	APPR

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TITLE: ENCLOSURE OUTLINE–N1 NON SINEWAVE 1200~1500kVA G3+B 480VAC 6 PULSE		REVISION: 1		SCALE: 1.0=26.0	
CUSTOMER:		PROJECT NUMBER:		DRAWING NUMBER: 1808HR34	

